Summary

New methodology released by the U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality (AHRQ) allowed the Texas Health Care Information Council (THCIC) to use Texas Inpatient Hospital Discharge Data to produce risk-adjusted, county level admission rates for 16 specific health conditions. With high quality, community-based ambulatory care, hospitalization for these ambulatory care sensitive conditions often can be avoided.

The data for this report were collected by THCIC from over 400 Texas hospitals under authority of Chapter 108 of the Texas Health and Safety Code and is estimated to represent over 95% of hospitalizations in Texas. Hospital admissions are classified by the patient's county of residence. Texas counties in which there are no hospitals or which contain hospitals exempt from the data collection system are identified for possible under-reporting. State averages are provided as an additional point of comparison.

The purpose of this report is to provide health planners and policymakers with comparable data to identify community need levels, target resources, and track the impact of health interventions for improving access to ambulatory care. Although other factors outside the direct control of the health care system, such as poor environmental conditions, or lack of patient adherence to treatment recommendations, can result in hospitalization, this report provides a good starting point for assessing quality of outpatient health services in counties throughout the state[3].

Introduction

Rates of preventable hospitalization often are used to document potential barriers to ambulatory care, to assess the performance of the primary care delivery system, and to identify possible deficiencies in the quality of outpatient care[4]. This is Texas' first look at the occurrence of preventable hospitalizations in the state using Texas Inpatient Hospital Discharge Data collected by THCIC.

The report provides county level maps and tables showing the rates of admission of residents of that county for 16 specific conditions, after adjusting for age and gender differences. These risk-adjusted rates present the best estimate of a particular county population's admission rates if every county in the state had the same age and sex distribution, thus allowing report users to focus on disparity in access to, and quality of, ambulatory care services.

With high-quality, community-based primary care, hospitalization for the medical conditions covered in this report often can be avoided[3]. For example, patients with diabetes may be hospitalized for diabetic complications if their conditions are not adequately monitored or if they do not receive the patient education needed for appropriate self-management. Patients may be hospitalized for asthma if primary care providers fail to adhere to practice guidelines or to prescribe appropriate treatments. Patients with appendicitis who do not have ready access to surgical evaluation may experience delays in receiving needed care, which can result in a life-threatening condition--perforated appendicitis[3].

High risk-adjusted admission rates for ambulatory care sensitive conditions may be indicative of problems with access to primary health care services or with deficiencies in outpatient management and follow-up[5]. These adjusted rates provide useful information for establishing local health priorities, or allocating limited resources among communities[6].

Importance of this report

In its 1993 report, *Access to Health Care in America*, the Institute of Medicine (IOM) recommended that preventable hospitalizations be used to monitor access to health care services at the national level over time, tracking whether conditions for

obtaining care were improving or getting worse, especially for vulnerable population groups[7]. With this report, THCIC provides a baseline assessment of preventable hospitalization rates throughout the state. The Centers for Disease Control and Prevention reports that preventable hospitalizations increased nationally by two thirds between the years 1980 through 1998[8].

Some of the ambulatory care sensitive conditions included in this report account for lengthy hospitalizations and enormous economic burden on the health care system. For instance, diabetes with complications is one of the top ten reasons for hospitalization of uninsured Texans, accounting for 11.6 percent of uninsured hospitalizations in Texas in 2001[2].

Methods for this report

Researchers and policymakers have agreed for some time that inpatient data offer a useful window on the quality of preventive care in a community[9]. To this end, the 16 measures in this report were developed as *Prevention Quality Indicators* (PQIs) by the federal Agency for Healthcare Research and Quality (AHRQ). Even though these indicators are based on hospital inpatient data, they provide insight into the quality of the health care system outside the hospital setting[10]. The PQIs are the direct result of years of study and research in the use of hospital administrative data to study and improve health care services. Extensive information on the development of AHRQ's *Prevention Quality Indicators* is available on AHRQ's web site at http://www.ahrq.gov.

How this report is organized

The body of this report consists of 16 separate sections, one for each of the 16 ambulatory care sensitive conditions which together comprise the AHRQ's *Prevention Quality Indicators*. Each indicator section begins with a **Texas map** showing the risk-adjusted admission rate in 2001 for that indicator in each of the state's 254 counties. A definition of the indicator is provided before each map. Risk-adjusted admission rates are shown within one of four ranges, from low to high. Texas counties in which there are no hospitals or which contain hospitals exempt from reporting are identified for possible under-representation in this report. The state average is provided as an additional point of comparison.

Statistical tables follow each indicator map to provide users with data in addition to the risk-adjusted admission rate to aid in assessing the meaning of each county's rates. The observed rate shows the actual hospitalization rate for the indicator per 100,000 population-at-risk, and is provided for users whose primary interest is to focus on a particular county without any comparisons to other counties. The number of admissions for each indicator (numerator) and the population-at-risk figure used to derive both the observed and the adjusted rates (denominator) is provided. The 99% confidence interval is included to aid report users in assessing whether the adjusted rate is significantly different from the state average or other counties. Risk-adjusted rates as they are shown in the tables are marked with asterisks if the county's rate is significantly above or below the state average. In order to protect patient confidentiality, rates are suppressed when there are less than five admissions for any indicator.

The report is followed by **three appendices**. Appendix 1 consists of tables developed by AHRQ that document the diagnostic codes selected for inclusion in each indicator, along with the age group of the population at risk for the indicator/condition. Appendix 2 provides a county list with the reporting status of each hospital in that county. It should be noted that many counties have no hospitals. Appendix 3 is a map of Texas that includes the names of counties for use as a reference when studying the indicator maps.

Data source

The data source for this report is Texas Inpatient Hospital Discharge Data (TIHDD) collected and maintained by THCIC under authority of Chapter 108 Texas Health and Safety Code, and administra-

tive rules. State licensed hospitals, except those that are statutorily exempt by law from reporting, are included in the database. The TIHDD consists of an administrative record for each hospital stay that occurred at a reporting hospital.

Risk-adjusted rates

The purpose of risk adjustment is to obtain fair statistical comparisons between distinct populations, in this case, between Texas counties and the state average. Significant differences in demographic risk factors are found among patients treated in different counties, especially in a state as large and diverse as Texas. Risk adjustment of the data was needed to make accurate and valid county comparisons of the statistics in this report. For this report, risk adjustment was made on the basis of patient age and gender from a national database.

Limitations of this report

The primary limitation of this report is the fact that the data source does not contain records from hospitals exempt by law from reporting. Exempt hospitals include those located in a county with a population less than 35,000, or those located in a county with a population more than 35,000 and with fewer than 100 licensed hospital beds and not located in an area that is delineated as an urbanized area by the United States Bureau of the Census[11] . Exempt hospitals also include hospitals that do not seek insurance payment or government reimbursement[12].

Because this report is based on administrative data, the results have limitations. Recording administrative data - or coding - varies among hospitals, primarily due to different requirements by insurance payers. Codes do not provide specific details about a patient's condition at the time of admission, nor capture everything that occurs during a hospital stay.

Basic Terms and Concepts

Access: The timely use of personal health care services to achieve the best possible health outcomes[13]. This definition includes both the use and effectiveness of health services. The concept of access also encompasses physical accessibility of all facilities[14].

Ambulatory care: Health care services provided to patients on an ambulatory basis, rather than by admission to a hospital or other health care facility[14].

Ambulatory-care-sensitive conditions: Conditions for which good outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease[14].

Average (mean): This is the sum of all values divided by the number of values. In this report, the state average is calculated by adding number of occurrences of each condition divided by the total populations-in-question for each of the counties included in the report. Averages can be significantly affected by a few unusually low or high values ("outliers").

Confidence Interval: A range that depicts the likelihood that a county's risk-adjusted admission rate could be influenced by random chance. The larger the range is, the greater the possibility that the county's risk-adjusted admission rate may be influenced by random chance. The range will vary for each county depending upon the number of admissions for that condition and the size of the population-at-risk.

Health intervention: Any measure taken to improve or promote health or to prevent, diagnose, treat, or manage disease, injury, or disability[14].

Hospital: In Texas, hospital is legally defined as a public, for-profit, or nonprofit institution licensed or owned by this state that is a general or special hospital, private mental hospital, chronic disease hospital, or other type of hospital[15]. Patient discharges from a long-term care unit in a Texas licensed hospital are included in this report.

ICD-9-CM codes: (*International Classification of Diseases-9th Edition-Clinical Modification*) the ninth version of a coding scheme used by hospitals and third party payers to classify diagnoses and procedures.

Institute of Medicine (IOM): A private, non-profit institution that provides objective, timely, authoritative information and advice concerning health and science policy to government, the corporate sector, the professions and the public under a congressional charter[16].

Outpatient care: Medical or surgical care that does not include an overnight hospital stay[17].

Primary care: The provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients, and practicing in the context of family and community[18].

Quality: The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge[13].

Vulnerable population groups: High-risk groups of people who have multiple health and social needs. Examples include pregnant women, people with human immunodeficiency virus infection, substance abusers, migrant farm workers, homeless people, poor people, infants and children, elderly peole, people with disabilitites, people with mental illness or mental health problems or disorders, and people from certain ethnic or racial groups who do not have the same access to quality health care services as other populations[14].